Paper No. 12

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte THOMAS W. BEGLIN

Appeal No. 1999-0005
Application 08/188,001[1]

ON BRIEF

Before BARRETT, RUGGIERO, and BARRY, Administrative Patent Judges.

BARRETT, Administrative Patent Judge.

DECISION ON APPEAL

[1] Application for patent filed January 28, 1994, entitled "Automated Storage Library For Managing Allocation Of A Peripheral Data Storage Device In Response To A Multi-Volume Data Set Request."

This is a decision on appeal under 35 U.S.C. § 134 from the final rejection of claims 1-17.

We reverse.

BACKGROUND

The invention is directed to a method and device for allocating a peripheral data storage device (PDSD) when a collection of data volumes, defining a multi-volume data set, is requested in an automated storage library having a plurality of data volumes and a plurality of PDSDs. A "multi-volume data set" is a single data set that occupies multiple volumes. The volumes of the multi-volume data set are likely to be dispersed in a plurality of storage bins located throughout the library. The invention relates to selecting an optimum PDSD for mounting the volumes of the multi-volume data set; i.e., selecting one PDSD where each volume of the multi-volume data set is mounted. It is known to provide an "affinity list" for a volume which comprises an ordered list of the PDSDs that are physically closest to the specified volume. Without the improvement of the invention, the first PDSD on the affinity list, which is the PDSD closest to the first volume of the multi-volume data

set, would be selected. The invention assigns a weight to each PDSD based on its physical proximity to all the data volumes of the collection of data volumes defining a multi-volume data set and selects the PDSD with the closest overall physical proximity to the volumes of the data set.

Claim 1 is reproduced below.

1. A method for allocating a peripheral data storage device (PDSD) when a collection of data volumes, defining a multi-volume data set, is requested in an automated storage library having a plurality of data volumes and a plurality of PDSDs, the method comprising:

assigning weighted scores to said PDSDs based on their physical proximity to data volumes of said collection of data volumes; and

selecting a PDSD having a weighted score indicating closest proximity to said data volumes.

The Examiner relies on the following prior art:

Gelb et al. (Gelb)	5,018,060	May 21, 1991
Leonhardt et al. (Leonhardt)	5,164,909	November 17, 1992
Gniewek	5,287,459	February 15, 1994 (filed October 3, 1991)

Claims 1, 2, 5-8, 11-13, 16, and 17 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Gniewek.

Claims 3, 4, 9, 10, 14, and 15 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Gniewek and Gelb.

Claims 1-17 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Gniewek and Leonhardt.

We refer to the Final Rejection (Paper No. 7) and the Examiner's Answer (Paper No. 10) (pages referred to as "EA__"[2])

[2] Unfortunately, a hole has been punched through the page numbers on all sheets of all copies of the Examiner's Answer in the file. We have numbered the pages starting at page 1 beginning on the page following the cover sheet (i.e., the page having paragraph 1 to the Real Party in Interest).

for a statement of the Examiner's position, and to the Appeal Brief (Paper No. 9) (pages referred to as "Br__") for a statement of Appellant's arguments thereagainst.

OPINION

Gniewek

Claims 1, 2, 5-8, 11-13, 16, and 17 are grouped to stand or fall together (Br8). Claim 1 is selected as the representative claim.

The Examiner interprets the claimed "collection of data volumes, defining a multi-volume data set" to read on the multiple copies of a single volume data set taught in Gniewek. The Examiner reasons that the determination of the cartridge from which the data can be retrieved in the shortest response time "clearly suggests assigning a weighted score to each said PDSD and selecting a PDSD having a weighted score indicating closest proximity to each requested data volume . . ." (EA4) and that assigning a weighted score and selecting a PDSD based on the weighted score would have been obvious (EA4-5).

Appellant argues (Br10) that Gniewek does not teach or suggest a "multi-volume data set." The Examiner disagrees.

The Examiner states that Appellant fails to define what is meant by a multi-volume data set and interprets a "multi-volume data set" to include "multiple copies of data stored on different volumes" (EA13). The Examiner further states that "[n]o predefined 'volumes' or predefined 'multi-volume sets' have been recited in any of the claims" (EA14).

The Examiner errs in concluding that a "multi-volume data set" is not defined or claimed. The specification expressly discloses (p. 4, lines 4-6): "Each side of a cartridge, cassette or disk is considered a 'volume'. Data stored on one side comprises a 'data volume'. When a data set covers more than one side of a cassette or disk it is said to be a 'multi-volume data set'." A "multi-volume data set" is defined as a single data set that spans multiple volumes, which is consistent with its apparent meaning. A "multi-volume data set" does not have the same meaning as multiple copies of a single volume data set. Thus, we conclude the Examiner erred in interpreting a "multi-volume data set" to read on the multiple copies of a single volume data set in Gniewek.

Claim 1 recites "allocating a peripheral data storage device (PDSD) when a collection of data volumes, defining a multi-volume data set, is requested" (emphasis added) and "assigning weighted scores to said PDSDs based on their physical proximity to data volumes of said collection of data volumes" (emphasis added), which expressly require the multi-volume data set to comprise a collection of data volumes (plural) for a single data set. Claims 7 and 13 have similar limitations. The Examiner errs in concluding that volumes of a multi-volume set are not claimed.

We conclude that the Examiner's rejection must fail because it is based on an erroneous claim interpretation. Specifically, as discussed above, the Examiner errs in interpreting the claimed "collection of data volumes, defining a multi-volume data set" to read on the multiple copies of a single volume data set taught in Gniewek. Gniewek is directed to selecting the one, single copy from a multiplicity of data copies that can be retrieved in the shortest response time (abstract; col. 10, lines 45-47: "It is the purpose of the logic function module 90 to select the cartridge from which the data will be retrieved in the

shortest response time."). Gniewek does not disclose a "multi-volume data set," as defined, and, so, does not address Appellant's problem of "allocating a peripheral data storage device (PDSD) [from a plurality of PDSDs] when a collection of data volumes, defining a multi-volume data set, is requested," as recited in the preamble of claim 1, and does not suggest the claimed solution. Claim 1 recites the steps of "assigning weighted scores to said PDSDs based on their physical proximity to data volumes of said collection of data volumes, and selecting a PDSD having a weighed score indicating closest proximity to said data volumes." These steps, taken together with the preamble, require selecting a PDSD for mounting each volume of a multi-volume data set based on a weighted score indicating closest proximity to plural data volumes. Gniewek only matches up one cartridge (volume) with one drive (PDSD) and does not suggest weighting or selecting a PDSD to mount several volumes.

For these reasons, and for the reasons stated in Appellant's brief, with which we completely agree, the

rejection of claims 1, 2, 5-8, 11-13, 16, and 17 is reversed.

Gniewek and Gelb

Gelb does not cure the deficiencies of Gniewek with regard to claims 1 and 7. Accordingly, the rejection of dependent claims 3, 4, 9, 10, 14, and 15 is reversed.

Gniewek and Leonhardt

The Examiner finds that "Leonhardt et al describe that it is known in the art to record attribute information of storage devices for mapping storage devices and data volumes based on the attribute information (assigning a weighted score) and create a prioritized list of matching drive elements (storage devices) in order to select a storage device for a requested data volume . . ." (EA10). The Examiner concludes that it would have been obvious to assign a weighted score to each PDSD and select a PDSD having a weighted score indicating closest proximity to each requested data volume in Gniewek in view of Leonhardt in

order to fulfill the data request in the shortest response time (EA10).

We find that Leonhardt does not overcome the deficiencies of Gniewek because it also does not address selecting an optimum PDSD for mounting a collection of data volumes defining a multi-volume data set. Accordingly, the rejection of claims 1-17 is reversed.

CONCLUSION

The rejections of claims 1-17 are reversed.

REVERSED

LEE E. BARRETT)
Administrative Patent Judge)
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) BOARD OF PATENT
JOSEPH F. RUGGIERO) APPEALS
Administrative Patent Judge) AND
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